

Notice of Allowability

Application No.

10/627,361

Examiner

Faye Polyzos

Applicant(s)

TICE ET AL.

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1 September 2005.
2. ☒ The allowed claim(s) is/are 1-73.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 9/1/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

**EXAMINER'S COMMENT AND STATEMENT OF REASONS FOR
ALLOWANCE**

Comment on Submissions

1. This communication is responsive to submission of 1 September 2005.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 1 September 2005 was filed after the mailing date of the *Notice of Allowance* on 12 July 2005.

The submission is in compliance with the provisions of 37 CFR 1.97.

Accordingly, the information disclosure statement is being considered by the examiner.

Response to Arguments

3. Applicant's arguments, see pages 13-15, filed 2 May 2005, with respect to claims 1-9, 11-16, 24 and 25 have been fully considered and are persuasive.

The rejections of claims 1-9, 11-16, 24 and 25 have been withdrawn.

Allowable Subject Matter

4. Claims 1-73 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

Regarding independent claim 17, the prior art does not fairly disclose or suggest of a chamber where one gas entry opening is positioned in the chamber such the entering gas will enter into the first light and second light at substantially the same time.

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The examiner notes that while it is known in the art for the first and second reflectors of the chamber to focus and reflect IR energy beam from IR source and then reflect an altered IR energy beam to a detector, (see for example --Graham et al -- US 6,534,769 B1-- col. 6, lines 66-67 and col. 7, lines 1-3), the prior art does not fairly suggest the gas entering into the first and second light at substantially the same time.

Regarding independent claim 18, the prior art does not fairly disclose or suggest of a chamber where one gas entry opening is positioned in the chamber such that the entering gas will reach both the first and second concave reflective surfaces at substantially the same time.

The examiner notes that while it is known in the art for the first and second reflectors of the chamber to focus and reflect IR energy beam from IR source and then reflect an altered IR energy beam to a detector, (see for example -- Graham et al -- US 6,534,769 B1-- col. 6, lines 66-67 and col. 7, lines 1-3), the prior art does not fairly suggest that the entering gas reaches both concave reflective surfaces at the same time.

Regarding independent claim 19, the prior art does not fairly disclose or suggest of a chamber where one gas entry opening is positioned in the chamber such that water in the gas will condense substantially equally on both the first concave reflective surface and the second concave reflective surface at substantially the same time.

The examiner notes that while it is known in the art for a gas sensor to comprise of at least one gas entry opening such that the water in the gas can

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condense within the chamber (see for example -- Graham et al -- US 6,534,769 B1-- col. 4, lines 38-40), the prior art does not fairly suggest the water in the gas to condense equally on both reflective surfaces of the chamber at substantially the same time.

Regarding independent claim 27, the prior art does not fairly disclose or suggest of a gas detector comprising of multiple sensing devices where a portion of a first light ray and a portion of a second light ray are received by the first and second sensing devices.

The examiner notes that while it is known in the art for a gas sensor to comprise multiple reflective concave surfaces to reflect light rays from the emitter and a detector to sense a filtered beam in order to convert the impinging filtered beam to an electrical signal (see for example -- Graham et al -- US 6,534,769 B1-- col. 7, lines 32-40), the prior art does not fairly suggest receiving portions of light rays, reflected by the reflective surfaces by multiple sensing devices.

Regarding independent claim 45, the prior art does not fairly disclose or suggest of a gas detector comprising of a gas inflow port to enable inflowing ambient gas to diffuse substantially symmetrically into the portions.

The examiner notes that while it is known in the art the diffusion of inflowing gas into portions of the chamber (see for example -- Graham et al -- US 6,534,769 B1-- Figs. 2-5 and col. 6, lines 66-67 and col. 7, lines 1-3), the prior art does not fairly suggest diffusing the ambient gas substantially symmetrically into the portions.

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Regarding independent claim 55, the prior art does not fairly disclose or suggest of a method of gas detection providing inflowing gas sensing and referencing regions at the same time in order to project sensing and referencing beam across sensing and referencing region.

The examiner notes that while it is known in the art of inflowing gas sensing and referencing regions (see for example -- Graham et al – US 6,534,769 B1-- Figs. 2-5 and col. 6, lines 66-67 and col. 7, lines 1-3), the prior art does not fairly suggest the method of substantially simultaneously inflowing the two regions.

Regarding independent claim 60, the prior art does not disclose or fairly suggest of a gas sensor comprising a source of radiant energy substantially located on the plane between the first and second adjacent reflectors wherein the radiant energy is directly incident on each of the reflectors.

The examiner notes that it is known in the art for reflective members (156)(158) to provide multiple reflections of a beam of radiant energy (200) emitted from a source (154) and incident upon a sensor (162) (see for example *Graham et al –US 6,534,769—Fig. 5 and col. 4, lines 13-23*), the prior art does not suggest radiant energy directly incident on each of the reflectors to provide indicia of presence of predetermined fluid between source and reflector(s).

The remaining claims are allowable based on their dependency.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should

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preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Faye Polyzos whose telephone number is 571-272-2447. The examiner can normally be reached on Monday thru Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FP


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